REMARKS

The Application has been carefully reviewed in light of the Office Action dated February 11, 2003 (Paper No. 3). Claims 1 to 96 are in the application, of which Claims 1, 8, 27, 44 to 46, 53, 72 and 89 to 91 are the independent claims. Claim 91 to 96 have been added herein. Reconsideration and further examination are respectfully requested.

Initially, Applicants gratefully acknowledge the indication in the Office Action that Claims 27 to 43 and 72 to 88 recite allowable subject matter.

In addition and with respect to the drawings, the Office Action indicates objections have been raised in a form PTO-948 attached to the February 11, 2003 Office Action. However, no form PTO-948 accompanied the Office Action. In an April 19, 1999 Letter Transmitting Formal Drawings, Applicants submitted substitute formal drawings, and copies of the April 19, 1999 Letter and formal drawings are enclosed herewith.

By the Office Action, Claims 1 and 46 have been rejected under 35 U.S.C. § 102(b) over U.S. Patent 5,450,165 (Henderson), Claims 1 to 26, 44, 46 to 71and 89 have been rejected under 35 U.S.C. § 102(e) over U.S. Patent 6,404,517 (Chao), and Claims 45 and 90 have been rejected under 35 U.S.C. § 102(b) over U.S. Patent 5,537,516 (Sherman). Reconsideration and withdrawal of these rejections are respectfully requested.[1]

---

[1] The Office Action makes reference to a column 98 of Chao. Since Chao does not have a column 98, it is requested that the Examiner provide clarification as to which portion of Chao is actually being cited in the Office Action, should the rejection based on Chao be maintained.

The present invention generally concerns an application programming interface (API) usable by a software developer when writing an application, such as a color calibration program, that uses a color measuring device. In particular, the present invention relates to an API that provides a common interface between such an application program and plural different types of color measuring devices.

By virtue of this arrangement, the application program need not include separate routines for each different type of color measuring device. Instead, the application program is able to use the common interface provided by the API for each of the different types of color measuring devices.

Claims 1 and 46

Turning to the particular language of the claims, Claim 1 defines computer-executable process steps to provide an application programming interface (API). The application programming interface provides a common interface between an application program and plural different types of color measuring devices each having at least one color measuring sensor. The computer-executable process steps comprising plural functions for operating any of the plural different types of color measuring devices, wherein in order to complete an operation performed by at least one of the plural functions, the function that performs the operation must be called a number of times which is different for at least two different types of color measuring devices, and wherein for a color measuring device that is being operated, the API provides the application program with flow control data of the number of times that the function must be called.

The applied art, namely Henderson and Chao, is not seen to disclose the features of the claim. More particularly, the applied art is not seen to disclose computer-executable process steps providing an application programming interface, which provides a common interface between an application program and plural different types of color measuring devices, and comprising plural functions for operating any of the plural different types of color measuring devices, wherein in order to complete an operation performed by at least one of the plural functions, the function that performs the operation must be called a number of times which is different for at least two different types of color measuring devices, and wherein for a color measuring device that is being operated, the API provides the application program with flow control data of the number of times that the function must be called.

Henderson is seen to describe using existing image data as test patches to measure print quality. (See Henderson, Abstract.) A detector 104 polls the incoming data for a substantially contiguous mass of pixels in the image data that can be used as a test patch, and detector 104 is used to activate the densitometer when the test patch passes the densitometer. (See Henderson, beginning at col. 6, line 44, and col. 7, lines 43 to 64.) Henderson's detector 104 is not seen to be the same as an application programming interface providing a common interface between an application program and plural different types of color measuring devices. Henderson, and in particular the cited portions of Henderson, is not seen to even disclose an application programming interface and is also not seen to disclose an application programming interface providing an application program with flow control data of the number of times that a function is to be called.

Chao is also not seen to disclose the claimed features. More particularly, Chao is seen to describe printing a registration mark on a color patch sheet, which is in turn used in identifying the location of patches in a color patch. (See Chao, Abstract.) Chao's image processing unit 14, consisting of a CPU 104, RAM 106, ROM 108 and temporary register set 110 as shown in Figure 4 and discussed at col. 9, lines 6 to 26, is merely seen to be a computing device with memory, and is not seen to disclose an application programming interface providing an application program with flow control data of the number of times that a function is to be called in order to complete.

At col. 3, line 56 to col. 4, line 14, Chao is seen to indicate that a device that has been calibrated in the factory may need to be re-calibrated in the field, and that there are problems in field re-calibration with locating the patterns of test patches. At col. 7, line 34 to col. 8, line 47, Chao is seen to describe a calibration image generator 56 that directs a printer to print test patterns, a registration mark processor that recognizes the registration marks, and a calibration unit that compares patterns directed to be printed with those scanned by the scanner. At col. 6, lines 41 to 61, Chao is seen to describe using a measuring device to measure test patches in device-independent color space and a scanner to measure the test patches in device-dependent color space, and generating forward and inverse functions to convert between device dependent and device independent color spaces.

Nothing in the cited portions of Chao is seen to disclose a function used for operating plural color measuring devices, wherein in order to complete an operation using a color measuring device the function must be called a number of times which is different for at least two different types of color measuring devices, and wherein an API provides an

application program with flow control data of the number of times that the function must be called.

Accordingly, Chao, and in particular the cited portions thereof, is not seen to disclose the features of Claim 1. Therefore, for at least the foregoing reasons, Claim 1 is believed to be in condition for allowance. Further, Applicants submit that Claim 46 is believed to be in condition for allowance for at least the same reasons.

Claims 2 to 7 and 47 to 52 are dependent from the independent claims discussed above and are therefore believed patentable for the same reasons. Because each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.

Claims 8 and 53

Claim 8 defines computer-executable process steps to provide an application programming interface (API). The API provides a common interface between an application program and plural different types of color measuring devices each having at least one color measuring sensor. The computer-executable process steps comprise plural functions for operating any of the plural different types of color measuring devices. A calibrate-position function calibrates a relative position of a recording medium with respect to any of the plural different types of color measuring devices. A calibrate-sensor function calibrates any of the color measuring sensors of any of the plural different types of color measuring devices. A move-to-patch function relatively positions any of the color measuring sensors and a color patch for any of the plural different types of color measuring devices, the move-to-patch function is provided with a logical color patch number by the

application program. In addition, a make-measurement function makes a color measurement of the patch at which any of the color measuring sensors is relatively positioned, the make-measurement function provides the application program with a color measurement value for the color patch. In order to complete an operation performed by at least one of the plural functions, the function that performs the operation must be called a number of times which is different for at least two different types of color measuring devices, and wherein for a color measuring device that is being operated, the API provides the application program with flow control data of the number of times that the function must be called.

The applied art, namely Chao, is not seen to disclose computer-executable process steps providing an application programming interface as a common interface between an application program and plural different types of color measuring devices, and comprising calibrate-position, calibrate-sensor, move-to-patch, and make-measurement functions, wherein in order to complete an operation performed by one of the plural functions, the function that performs the operation must be called a number of times which is different for at least two different types of color measuring devices, and wherein for a color measuring device that is being operated, the API provides the application program with flow control data of the number of times that the function must be called.

As discussed above with reference to Claim 1, Chao is seen to concern using forward and inverse functions to convert between device dependent and device independent color spaces, and to place registration marks on a test patch sheet, which are then used to locate the test patches on a sheet of test patches. Nothing in Chao, and in particular the cited portions of Chao, is seen to disclose a functions (such as calibrate-

position, calibrate-sensor, move-to-patch, make-measurement functions) called to complete an operation using a color measuring device, and in order to complete an operation performed by at least one of the plural functions, the function that performs the operation must be called a number of times which is different for at least two different types of color measuring devices, and wherein for a color measuring device that is being operated, the API provides the application program with flow control data of the number of times that the function must be called.

Accordingly, Chao, and in particular the portions of Chao cited in the Office Action, is not seen to disclose the features of Claim 8. Therefore, for at least the foregoing reasons, Claim 8 is believed to be in condition for allowance. Further, Applicants submit that Claim 53 is believed to be in condition for allowance for at least the same reasons.

Claims 9 to 26 and 54 to 71 are dependent from the independent claims discussed above and are therefore believed patentable for the same reasons. Because each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.

Claims 44 and 89

Claim 44 defines a dynamically linkable library (DLL) for making color measurements with any of plural different types of color measuring devices each having at least one color measuring sensor. The DLL comprises plural functions each of which is for operating any of the plural different types of color measuring devices. A calibrate-position function calibrates a relative position of a recording medium with respect to any of the plural different types of color measuring . The plural functions includes a calibrate-sensor

function calibrates any of the color measuring sensors of any of the plural different types of color measuring devices. A move-to-patch function relatively positions any of the color measuring sensors and a color patch for any of the plural different types of color measuring devices, the move-to-patch function being provided with a logical color patch number. A make-measurement function makes a color measurement of the patch at which any of the color measuring sensors is relatively positioned, the make-measurement function providing a color measurement value for the color patch. In order to complete an operation performed by at least one of the plural functions, the function that performs the operation must be called a number of times which is different for at least two different types of color measuring devices, and wherein for a color measuring device that is being operated, the DLL provides flow control data of the number of times that the function must be called.

Reference is made to the above discussion concerning Claim 8. For at least the same reasons, Chao, and in particular the cited portions of Chao, is not seen to disclose a dynamically linkable library (DLL) for making color measurements with any of plural different types of color measuring devices each having at least one color measuring sensor, the DLL comprising plural functions (such as calibrate-position, calibrate-sensor, move-to-patch, and make-measurement functions) each of which is for operating any of the plural different types of color measuring devices, wherein in order to complete an operation performed by at least one of the plural functions, the function that performs the operation must be called a number of times which is different for at least two different types of color measuring devices, and wherein for a color measuring device that is being operated, the DLL provides flow control data of the number of times that the function must be called.

Accordingly and for at least these reasons, Claim 44 is believed to be in condition for allowance. Further, Applicants submit that Claim 89 is believed to be in condition for allowance for at least the same reasons.

Claims 45 and 90

Claim 45 defines a color calibration program, the color calibration program comprising computer-executable process steps to calibrate color fidelity of a color printer based on color measurements made by a color measuring device of color patches printed on a recording medium by the color printer. The computer-executable process steps comprising code to generate print data for the color patches. In addition, code sends the print data to the color printer so as to print the color patches on the recording medium. Code makes color measurements of the color patches printed on the recording medium using any of plural different types of color measuring devices. The code to make color measurements calls functions provided by an application programming interface (API) that provides a common interface to the plural different types of color measuring devices, the code to make color measurements using the common interface. In addition, code calibrates the color fidelity of the color printer based on the color measurements.

The applied art, namely Sherman, is not seen to disclose a color calibration program comprising code to call functions provided by an application programming interface that provides a common interface to the plural different types of color measuring devices, the code to make color measurements using the common interface.

Sherman is seen to describe calibration of color reproduction devices in order to produce consistent colors across a variety of reproduction devices using a set of

calibration curves for correcting the color output of the color reproduction device. (See Sherman, Abstract.) At col. 13, line 31 through col. 14, line 35 and col. 17, lines 20 to 47), Sherman is seen to describe calibrating a subject system (i.e., a scanner) using a reference system, which uses a densitometer or a colorimeter, to measures densities, which are then used to convert the R, G and B readings of the subject scanner to generate readings that would be obtained using the object densitometer of the reference system.

Nothing in Sherman, and in particular the cited portions of Sherman, is seen to disclose code to call functions provided by an application programming interface that provides a common interface to the plural different types of color measuring devices, the code to make color measurements using the common interface.

Accordingly and for at least these reasons, Claim 45 is believed to be in condition for allowance. Further, Applicants submit that Claim 90 is believed to be in condition for allowance for at least the same reasons.

CONCLUSION

In view of the foregoing, the entire application is believed to be in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

Applicants' undersigned attorney may be reached in our Costa Mesa,

California office at (714) 540-8700. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

Attorney for Applicants

Registration No. 37,000

FITZPATRICK, CELLA, HARPER & SCINTO
30 Rockefeller Plaza
New York, New York 10112-2200
Facsimile: (212) 218-2200

CA_MAIN 62766 v 1